

ADJUSTABLE THUMB RINGLET FOR PIVOTED CUTTING INSTRUMENTS

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## FIELD OF THE INVENTION

The present invention relates generally to pivoted cutting instruments and, more particularly, to the use of an adjustable, articulated thumb ringlet with a pivoted cutting instrument.

## BACKGROUND OF THE INVENTION

The use of thumb ringlets for surgical and hair cutting scissors is known to provide greater comfort, better control and reduced fatigue for surgeons and barbers, respectively. However, these advantages are decreased if the ringlets do not properly fit the user's thumb. In U.S. Patent No. 5,469,624 for "Interchangeable  
10 Thumb Ringlets For Pivoted Cutting And Grasping Instruments" which issued to Billy H. Brenton and James J. Stagnone on November 28, 1995, interchangeable, flexible thumb ringlets are described for improving the comfort and control of scissors. The flexible ringlets are removably attached to the thumb handle portion of such instruments. In order to change the size of a ringlet, the ringlet must be  
15 removed and discarded. A ringlet having the desired size may then be installed.

Accordingly, it is an object of the present invention to provide pivoted cutting instruments having adjustable, articulated thumb ringlets.

Additional objects, advantages and novel features of the invention will be set forth, in part, in the description that follows, and, in part, will become apparent to  
20 those skilled in the art upon examination of the following or may be learned by practice of the invention. The objects and advantages of the invention may be realized and attained by means of the instrumentalities and combinations particularly pointed out in the appended claims.

## SUMMARY OF THE INVENTION

To achieve the foregoing and other objects, and in accordance with the purposes of the present invention, as embodied and broadly described herein, the scissors having an adjustable, articulated thumb ringlet hereof includes a first shaft having a handle portion and a cutting portion separated by a first pivot location, the  
30 handle portion having a tubular portion; a thumb ringlet having an open portion and

a hole opposite the open portion; a flexible pin adapted to be inserted through the hole in the thumb ringlet and into the tubular portion of the first shaft for rotatably connecting the thumb ringlet to the first shaft; a second shaft having a handle portion and a cutting portion separated by a second pivot location; and a second pin for pivotably connecting the second shaft to the first shaft in the region of the first pivot location and the second pivot location in such a manner that the cutting portion of the first shaft and the cutting portion of the second shaft cooperate as opposing cutting portions of the scissors.

In another aspect of the invention and in accordance with its objects and purposes, the scissors having an adjustable, articulated thumb ringlet hereof includes a first shaft having a handle portion and a cutting portion separated by a first pivot location; a thumb ringlet having an open portion; means for rotatably and flexibly connecting the thumb ringlet to the first shaft; a second shaft having a handle portion and a cutting portion approximately separated by a second pivot location; and means for pivotably connecting the second shaft to the first shaft in the region of the first pivot location and the second pivot location in such a manner that the cutting portion of the first shaft and the cutting portion of the second shaft cooperate as opposing cutting portions of the scissors.

Benefits and advantages of the present invention include, but are not limited to, allowing the user of a pivoted cutting instrument fitted with articulated thumb ringlets to comfortably and precisely utilize such instruments by adjusting the size of the ringlet to properly match their thumb size.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and form a part of the specification, illustrate embodiments of the present invention and, together with the description, serve to explain the principles of the invention. In the drawings:

FIGURE 1 is a schematic representation of the view from one side of the scissors of the present invention showing, in particular, the adjustable, articulated thumb ringlet thereof.

FIGURE 2 is a schematic representation of the view from the other side of the scissors of the present invention shown in FIG. 1 hereof.

FIGURE 3 is a schematic representation of a perspective view of the scissors shown in FIG. 1 hereof showing, in particular, the rotation of the thumb ringlet relative to the scissors shaft.

FIGURE 4 is a schematic representation of an exploded perspective view of the flexible, the adjustable thumb ringlet and the cylindrical portion of the handle portion of the shaft into which the flexible pin is inserted of the scissors shown in FIG. 1 hereof.

FIGURE 5, is a schematic representation of the assembled thumb ringlet, and shaft of the present invention shown in FIG. 4 hereof.

#### DETAILED DESCRIPTION

Briefly, the present invention includes a pivoted cutting instrument having an adjustable, articulated thumb ringlet.

Reference will now be made in detail to the present preferred embodiments of the invention examples of which are illustrated in the accompanying drawings. In what follows, identical callouts will be used to identify similar or identical structure. Turning now to FIG. 1 hereof, shown is a schematic representation of a view from one side of scissors, **10**, in an open configuration, illustrating, in particular, the adjustable, articulated thumb ringlet of the present invention. Shaft, **12**, includes a cutting portion, **14**, and a handle portion, **16**, separated by pivot, **18**, handle portion **16** bearing fixed finger ringlet, **20**, having plastic insert, **22**. Plastic insert **22** can be fabricated out of a variety of available plastics and is used to provide comfort and control of the scissors to a user when scissors **10** is positioned in various ways. Shaft, **24**, includes cutting portion, **26**, and handle portion, **28**, bearing tubular section, **30**, located substantially perpendicular to both the long axis of shaft **24** and to the axis of pivot **18**, to which articulated and adjustable thumb ringlet, **32**, is rotatably and flexibly attached using flexible pin, **34**. Adjustable thumb ringlet **32** and pin **34** will be described in more detail hereinbelow. The terminus of flexible pin **34** further functions as a bumper for absorbing part of the force generated by the cutting process when the scissors is closed which would otherwise

be transmitted to the user's hand. Depression, **36**, in handle portion **16** cooperates with optional stabilizer, **38**, located in the vicinity of fixed finger ringlet **20** on handle portion **16** to improve the stability of the scissors while in use by providing stable positions for a user's fingers when the user's thumb is located in thumb ringlet **32**.

5 Shown also in FIG. 1 is adjustable tensioner, **40**, for adjusting the forcer between shaft **12** and shaft **24**. As illustrated, threaded and knurled nut **40** is tightened or loosened on threaded pin, **42a**, to provide tensioning. Scissors **10** can be fabricated from a variety of metals and alloys, such as stainless steel. Threaded pin **42a** can be fabricated using a variety of materials, such as metals and alloys, and  
10 sturdy plastics, as examples.

FIGURE 2 is a schematic representation of a view from the other side of scissors **10** shown in FIG. 1 hereof, but in a closed configuration. The back portion, **42b**, of threaded pin **42a** is clearly illustrated.

FIGURE 3 is a schematic representation of a perspective view of the scissors  
15 shown in FIGS. 1 and 2 hereof in a closed configuration showing, in particular, the rotation of thumb ringlet **32** relative to scissors shaft **24**.

FIGURE 4 is a schematic representation of an expanded perspective view of pin **34**, thumb ringlet **32** and tubular portion **30** of handle portion **28** of shaft **24** into which pin **34** is inserted. In the embodiment shown, flexible pin **34** includes  
20 substantially rectangular portion, **44**, disposed at one end thereof, cylindrical portion, **46**, flange, **48**, cylindrical portion **50**, flange, **52**, and cylindrical portion **54**. Thumb ringlet **32** includes substantially rectangular depression, **56**, and hole, **58**. In order to affix thumb ringlet **32** onto tubular portion **30** of handle portion **28**, cylindrical portion **54** is first inserted through hole **58** in thumb ringlet **32** and through  
25 hole **60** in tubular portion **30**. Cylindrical portion **54** is then grasped by a pair of pliers or some other grasping instrument to assist in pulling flexible pin **34** through holes **58** and **60**, in such a manner that rectangular portion **44** is seated in depression **56**, flange **48** holds cylindrical portion **46** in place in hole **58** by pressing against surface, **62**, of thumb ringlet **32**, and cylindrical section **50**, once captured  
30 by flange **52** pressing against surface, **64**, of tubular portion **30** can rotate and flex in hole **60** of tubular portion **30**. It should be mentioned that a cylindrical or other

shaped end piece **44** can also be used in place of a substantially rectangular one as illustrated in FIGS. 4 and 5 hereof. In the case of a cylindrical end piece, thumb ringlet **32** can rotate around cylindrical portion **46**.

Flexible pin **34** has been fabricated using Pebax® polyether block amides thermoplastic polymers (Pebax® is a registered trademark of ATOFINA Chemicals, Inc.), having durometer values between 200 and 750. Durometer values about 350 have been found to provide user comfort and ease of use of the scissors of the present invention. Other flexible materials can also be used, so long as they are durable, and permit the scissors to be used in a comfortable and efficient manner. In the case of surgical scissors, pins and other materials must be chosen such that they can withstand sterilization procedures.

FIGURE 5, is a schematic representation of the assembled thumb ringlet, and tubular section. After assembly, cylindrical portion **54** may be cut down to a length which does not interfere with the operation of scissors **10**, while providing a bumper as described hereinabove. It should be noticed that thumb ringlet **32** has an opening, **66**, located approximately opposite hole **58** therein. Thumb ringlet **32** can be fabricated from any metal that can be repeatedly bent such that arms, **68** and **70**, can be straightened or bent further and the thumb ringlet retain its adjusted shape. In this manner, a single ringlet can serve several users. Silver and stainless steel have been employed for thumb ringlet **32**, although other materials which can maintain their shape after repeated bending can be used.

The foregoing description of the invention has been presented for purposes of illustration and description and is not intended to be exhaustive or to limit the invention to the precise form disclosed, and obviously many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application to thereby enable others skilled in the art to best utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the claims appended hereto.